

Serial No. 10/677,291

Amendment Dated: July 18, 2008

Reply to Office Action Mailed: January 23, 2008

Attorney Docket No. 056208.52811US

**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Figures 4, 8-10, 13 and 14. In Figure 4, the reference numeral 72 has been added, while in Figure 8, the reference numeral 72 has been corrected to 71. In Figure 9, the bonding projection 76 on the punch 70 has been redrawn so that it is narrower than the projection 66 on the punch 60, as discussed in the specification at page 12, line 23 *et seq.* In Figure 10, the existing reference numeral 72 has been corrected to 71, while a new reference numeral 72 has been added. Finally, in Figure 14, the reference numeral 72 has been corrected to 71.

Attachment: Replacement Sheets

Annotated Sheets Showing Changes

**REMARKS**

The drawings have been objected to under 37 C.F.R. §1.83(a) for failing to show every feature of the invention specified in the claims. In particular, page 2 of the Office Action indicates that the “plastic bonding marks” must be shown or the feature cancelled from the claims. Correspondingly, Claims 7-10 and 21-30 (all claims currently of record) have been rejected under 35 U.S.C. §112, first paragraph for failing to comply with the written description requirement based on the proposition that the “plastic bonding marks” in Claims 7, 10, 21 and 29 are now disclosed.

In response to these grounds of objection and rejection, Applicants have amended the claims to replace the terminology “preliminary bonding marks” and “plastic bonding marks” with “a first bonding mark” and “a second bonding mark”, respectively. In addition, the claims have also been amended to clarify the proposition that the “first bonding mark” is in the form of a first annular depression around the bonding hole, while the “second bonding mark” is in the form of a second annular depression around the bonding hole, which is formed at the bottom of the first bonding mark. The respective first and second bonding marks in the form of annular depressions are shown in the drawing in Figures 4, 10 and 15, and are labeled, respectively, with reference numerals 71 and 72.

The formation of the first bonding mark is illustrated in Figure 8, and discussed in the specification at page 10, line 12 through page 12, line 1. Figure 8 shows the ring-like projection 66 of the preliminary bonding punch 60 having been driven downward into the material of the hub 2, forming the first bonding mark in the form of an annular depression 71. (See in particular page 11, line 22 through page 12, line 1.) As noted at page 12, lines 4 through 6, the effect of this deformation of the hub 2 is to deform it to such a depth as to fill the "fitting clearance" which previously existed between the shaft 1 and the hub 2 in the vertical direction. The "fitting clearance" permits the shaft 1 to be freely inserted into the hub 2, without forming a scrape or gall, as is the case with the prior art discussed at page 2, lines 3-12 of the specification.

The formation of the second bonding mark is discussed in the specification at page 12, line 12 through page 13, line 9 and illustrated in Figure 10. As shown in Figure 10, after formation of the first bonding mark 71, a second punch tool 70, having a narrower ring-like bonding projection 76 (page 12, lines 21-23) is used in place of the previous bonding punch. As noted in the specification at page 12, line 19 through page 13, line 9, the narrower bonding projection 76 of the punch 70 is driven downward, forming a second annular depression 72 at the bottom of the first depression 71. As illustrated in Figure 15, the effect of formation of the second bonding mark 72 is to cause a plastic flow of material from the hub 2 into the groove or grooves 31 on the periphery of the shaft 1,

thereby completing the plastic bonding of the shaft and the hub 1. (See page 13, lines 2-9.)

Applicants have carefully reviewed, revised and reformatted Claims 7-10 and 21-30 in order to clarify the matters set forth above, and to place these claims in a more readable format. The phrase "rotating shaft" which was previously used interchangeably to refer to the "member to be bonded" has now been changed to "member to be bonded" consistently throughout the claims. In addition, in Claim 7, the third paragraph from the end (which appeared at the top of page 3 in the Amendment submitted October 31, 2007) has been deleted, and its substance incorporated into the second paragraph of the body of the claim. Finally, the claims have been further revised for the purpose of clarity and otherwise addressing potential formal matters. According, Claims 7-10 and 21-30 are now believed to be allowable.

In view of the matters set forth and discussed above, Applicants respectfully submit that all features of the present invention are illustrated in the drawings, and are supported in the disclosure. Accordingly, Applicants further submit that the objection to the drawings and the rejection of Claims 7-10 and 21-30 have been overcome. In addition, Applicants have also submitted a new Claim 31, which incorporates the same limitations discussed above, albeit

using a different claiming technique. Claim 31 is believed to be allowable for the same reason that Claims 7-10 and 21-30 are allowable.

As noted previously, Applicants have submitted herewith replacement pages bearing Figures 4, 8-10, 13 and 14, in which certain reference numerals have been corrected as indicated in the annotated sheets. In addition, a new version of Figure 9 has been submitted, which properly shows the "narrower" ring-like projection 76 at the bottom of the punch tool 70, which is used to form the second bonding mark 72. This revision to Figure 9 is supported by the specification at least at page 12, line 21 through page 13, line 1. It is also consistent with the original Figure 9 in the priority document. Accordingly, Applicants respectfully submit that the drawing revisions do not insert new matter into this application.

In light of the foregoing remarks, this application should be in consideration for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

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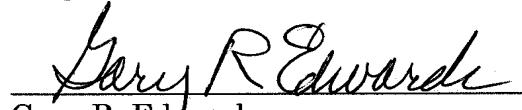
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please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056208.52811US).

Respectfully submitted,

  
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Attachments – Replacement and Annotated Drawing Sheets  
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